DOCUMENT RESUME

ED 106 799 CS 001 849

TITLE	Boise Structured Tutoring Program.
INSTITUTION	Boise City Independent School District, Idaho.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C.
PUB DATE	75
NOTE	21p.; See CS 001 934 for "Effective Reading Programs: Summaries of 222 Selected Programs"
EDRS PRICE	MF-$0.76 HC-$1.58 PLUS POSTAGE
DESCRIPTORS	*Cross Age Teaching; *Effective Teaching; Elementary Education; Reading Improvement; *Reading Instruction; *Reading Programs; Reading Skills; Remedial Reading
IDENTIFIERS	*Effective Reading Programs; Elementary Secondary Education Act TITLE I; ESEA Title I; Right to Read

ABSTRACT

This program, included in "Effective Reading Programs...," serves 750 first-through third-grade students from 14 elementary schools. The program is designed to teach letter names, consonant and vowel sounds, sight words, and decoding skills to students who have deficiencies in basic reading skills. The basic elements of the model include the following: pre-established instructional objectives, predetermined sequence for introducing the objectives, means of assessing mastery of the objectives, materials geared to instructional objectives, prescriptions for individual students based on pretest performance and prepared by trained tutors, procedures for systematically checking individual student mastery of instructional prescriptions, record-keeping procedures for tracking assignment and completion of prescriptions, and procedures for ensuring that objectives previously mastered are systematically reviewed. The program uses peer tutors who are fifth- and sixth-grade students at the same school as the program students. The tutors are tested and trained and then participate in role-playing situations to practice their skills before they begin tutoring. Tutors assist only one student during the school year. (WR/AIR)

ED106799

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BOISE STRUCTURED TUTORING PROGRAM.

Boise City Independent School District
Boise, Idaho

The Structured Tutoring Program was expanded in January 1974-75 to include paraprofessional adult tutors aides to tutor 268 educationally deprived 5th and 6th grade students. These students at this grade level had special needs which were not being met, either with the student tutoring program or their regular classroom work. All tutor aides received inservice training from Grant Harrison and used the materials developed for the student tutors. The major goal was to reinforce the students' basic skills in reading, and more specifically, to improve performance in decoding skills, sight-word recognition, and oral reading. Table I shows number of students in the 1974-75 program, and Tables II and III show the average number of students tutored by the Tutor Manager and student tutors, as compared to the average number tutored by the tutor aide in the classroom.

CS 001 648

Table I - Number of Students Tutored in Reading

	Tutor Manager	Adult Tutor Aides	No. of Aides
	Reading - Grades 1-4	Reading - Grades 5 & 6	
Campus	74	18	2
Franklin	37	14	2
Garfield	37	17	2
Hawthorne	41	21	2
Jefferson	39	13	1
Longfellow	65	16	1
Lowell	54	25	2
Madison	28(½ time)	12	1
Pierce Park	33	21	2
Roosevelt	34	11	1
Taft	56	28	2
Washington	45	14	1½
Whitney	69	16	2
Whittier	35	29	2
St. Mary's	19(½ time)	13	1
St. Joseph's	25		0
Sacred Heart	7(½ time)		½
TOTAL	698	268	25

Table II - $\bar{x}$ Number of Students per Tutor Manager

No. of Tutor Managers	No. of Children	$\bar{x}$ No. of Students per Tutor Manger
15½	698	45.03

Table III - $\bar{x}$ Number of Students per Tutor Aide

No. of Tutor Aides	No. of Children	$\bar{x}$ No. of Students per Tutor Aide
15	268	17.87

TUTORING PROCEDURES

The Structured Tutoring used in the study was a teaching technique developed by Grant Harrison[1] which utilized an intense individualized instructional approach. Trained student tutors from the fifth or sixth grade presented the subject matter to children in small steps or increments which required oral responses. Immediate feedback was then given by the tutor to indicate the correctness of the response. If the response was correct, the tutor gave a positively reinforcing statement, such as, "That's good." If the response was incorrect, the tutor marked it wrong but made no punishing statement.

The basic elements of the Harrison[2] Structured Tutoring model are: (a) pre-established instructional objectives, (b) a predetermined sequence for introducing the objectives specified, (c) a valid means of assessing mastery of the pre-established instructional objectives, (d) instructional materials commensurate with the instructional objectives, (e) validated tutoring techniques and procedures capable of making instructional prescriptions for individual students based on pretest performance, (f) management procedures capable of systematically checking

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[1]Harrison, Structured tutoring

Harrison, G. V. Beginning reading I: A professional guide for the lay tutor. (2nd ed.) Provo, Utah: Brigham Young University Press, 1972. (a)

individual student mastery of instructional prescriptions, (g) management procedures capable of maintaining a record of when instructional prescriptions are made, the date the student achieved mastery of each instructional prescription, and the date subsequent reviews of objectives previously mastered were made, (h) management procedures capable of insuring that objectives previously mastered were systematically reviewed.

These management procedures were conducted by trained paraprofessionals who were known as Tutor Managers. The term "tutor manager" was used to distinguish them from other paraprofessionals who worked in the schools under the direction of teachers, as instructional aides. While the Tutor Manager made frequent reports to teachers regarding the progress of students, she did not work under the direction of the teacher. During the beginning phases of the study, her major tasks were concerned with administering the diagnostic reading pretests and the pretest of the affective instrument to the control group and the experimental group of children in her school.

While tutors were trained as needed for the regular tutoring program, all trained tutors were working with an assigned student, therefore, it was necessary also to train a student tutor for each child assigned to the study. The potential student tutors were fifth or sixth grade children

referred by their teacher. No special criteria were used in making the referral, but it was assumed that each fifth and sixth grade student would have the opportunity to serve as a tutor to a younger child sometime during the year.

The specific tutoring treatment involved the diagnosis of a child's reading skills, individual work by the tutor with the child using the prescribed materials and teaching methods, frequent mastery checks and reviews, and a criterion posttest which measured the knowledge of the child at the end of tutoring.

The diagnostic reading pretest measured skills in naming letters, producing the sounds of letters, diphthongs, and digraphs, reading sight words, and decoding. On the basis of performance on the pretest, the tutor manager developed a prescription for each student, assigned a tutor to each student, developed the tutoring schedule, and assigned needed materials to the tutors for the daily lessons. She was also responsible for systematically checking individual student mastery of instructional prescriptions and maintaining profile sheets on individual students. Tutors worked under the supervision of the tutor manager at all times and reported progress of their tutees to her daily. They also frequently wrote notes giving progress reports to parents and teachers of the children they were tutoring.

The tutoring schedule allowed for 20 minutes of actual tutoring per day per student in the experimental group for a period of six weeks. Two weeks were required prior to the study to set up the management procedures, train the tutors, and randomly select students for the study.

Figure 5 shows the systematic analysis of procedures followed in the regular tutoring program during the school year.

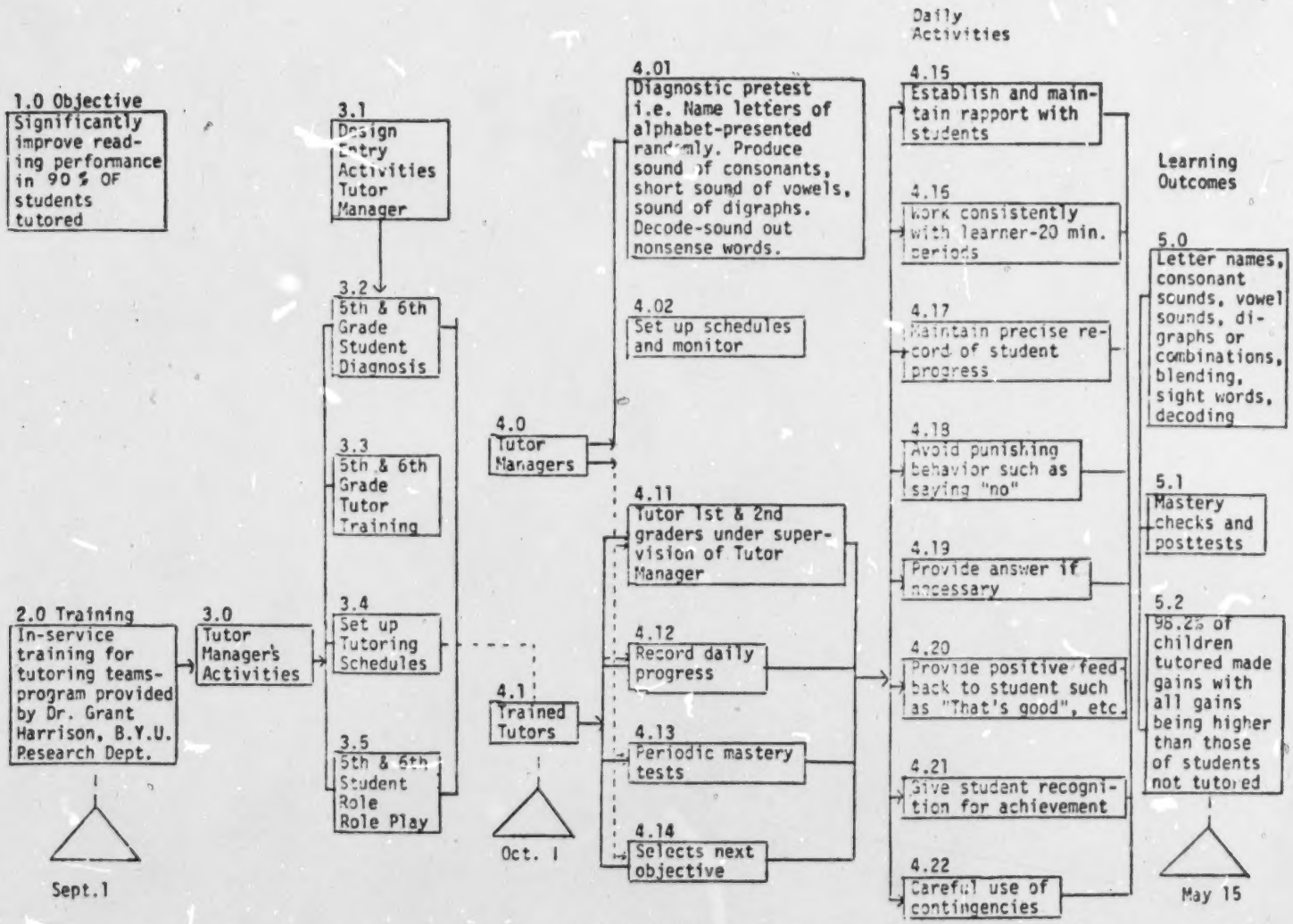

Fig. 5. Cross-Age Structured Tutoring Program

APPENDIX A

EVALUATION - 1973-74

EVALUATION REPORT

BOISE TUTORIAL PROGRAM

A title 1 program

Geraldine H. Plumb
Boise Public Schools

EVALUATION REPORT

BOISE TUTORIAL PROJECT
1973-74

Objective: To significantly improve reading performance in 85% of students tutored in the Title I Schools in Boise.

The tutoring project in the Boise Independent School District involved 14 schools and over 795 children as either tutors or learners. The project has several components which are presented separately in this report: (1) a controlled experiment comparing the reading gains of tutored and non-tutored children, and tutoring of primary grade children in basic reading skills.

1. Controlled Study

A sample of 80 students was selected from six of the schools included in the project. These students were drawn from the same population as the rest of the students tutored in the main part of the project and assigned at random to either an experimental or control group. The purpose of this study was to compare reading gains made in the classroom with gains brought about through the tutoring program. The experimental group was to be pre-tested then tutored and posttested while the control group was pre and post-tested but not exposed to the tutoring program. Forty students were assigned to the experimental group and 40 to the control group.

In spite of a short treatment time of five weeks with an average of 5.6 hours actual tutoring time per child, the results indicated that the tutoring program made a significant difference in reading gains with the experimental group outperforming the control group. Table I presents pretest scores for the experimental and control group on decoding and sight word subscores. Table II presents a comparison between experimental and control students and achieved reading gains representing the difference between pre & posttest scores. While

the experimental group out performed the control group on sight words the difference between the two groups was not statistically significant. This might be explained by noting that the major time and emphasis of the tutoring program is devoted to decoding skills (phonetic approach). These results indicate that tutoring does make a significant difference to reading gains in those areas tutored.

TABLE 1

Pretest Scores

Group	Decoding	Sight Words
Experimental	25.827	119.486
Control	31.758	137.939
	$t_{obs} = .570$*	$t_{obs} = .414$*

*all group differences were non-significant

TABLE II

Reading Gains

from Pre to Postest

Group	Decoding	Sight Words
Experimental	15.316	20.868
Control	7.227	15.591
	$t_{obs} = 2.687$*	$t_{obs} = .754$ (NS)

*$p < .01$

Tutoring in Basic Reading Skills

About 550 primary grade students were tutored in basic reading skills by either an older student (usually upper elementary grades) or by an adult. Included as adult tutors were tutor managers, volunteer parents, and paid or volunteer high school students. Because of missing or incomplete data about 60 of the students were exdluded from analysis in this section. Missing data was usually caused by the students moving away or absenteeism. The

sample size for this component of the project was 493 students, 368 of whom were tutored by older students and 125 by adults. The students were treated as two groups for purposes of data analysis. Tables III and IV present pre-posttest comparisons for the two groups on each of the seven subscores obtained from the Pretest.

TABLE III

Pre-Posttest Comparison
Adult Tutored Group (N=125)

Variable	Pretest	Posttest	t	P
Letter names	22.696	24.568	5.882*	< .001
Consonant sounds	14.728	19.416	13.933*	< .001
Short vowel sounds	2.048	4.728	18.011*	< .001
Digraphs	3.504	7.136	16.284*	< .001
Basic Sight Words	13.904	18.480	11.321*	< .001
Additional Sight Words	81.232	138.112	14.001*	< .001
Decoding	14.120	46.152	21.642*	< .001

* Significant Differences

Table III shows highly significant gains in reading for all seven of the subscores for those students tutored by adults. Table IV shows similar results for students tutored by older students.

Another set of analyses was undertaken comparing the effectiveness of adult versus students as tutors. Those students tutored by adults were compared with those tutored by students on pretest scores on each of the seven subscales. The results presented in Table V indicate significant differences between the groups on pretest scores of "letter names" and "consonant sounds" only. No significant differences were found on the other five variables.

It was also found that adult tutors held significantly more tutoring sessions per child than did the student tutors and that students tutored by adults completed more steps in the sequence than did students tutored by students. (See Table VI)

TABLE IV

Pre-Post Comparison
Student Tutored Group (N=368)

Variable	Pretest	Posttest	t	P
Letter names	23.383	24.774	11.973*	< .001
Consonant sounds	15.413	19.326	20.470*	< .001
Short Vowel sounds	1.981	4.639	30.100*	< .001
Digraphs	3.530	7.155	30.464*	< .001
Basic Sight Words	13.742	18.481	20.278*	< .001
Additional Sight Words	71.413	130.734	26.256*	< .001
Decoding	13.122	43.986	37.810*	< .001

*Significant Differences

TABLE V

Pretest Scores
Student and Adult Tutored Groups

Variable	Adult	Student	F	P
Letter names	22.375	23.425	10.597*	< .01
Consonant sounds	14.317	15.405	5.942*	< .05
Short vowel sounds	2.019	1.969	< 1.00	> .05
Digraphs	3.327	3.508	< 1.00	> .05
Basic Sight Words	13.683	13.796	< 1.00	> .05
Additional Sight Words	82.538	72.034	2.666	> .05
Decoding	13.000	13.126	< 1.00	> .05

*Significant Differences

TABLE VI

Adult vs. Student Tutored
Number of Tutoring Sessions and Steps Completed

Variable	Adult	Student	F	P
# of Tutoring sessions	52.048	42.723	13.459	$<.01$
Last step of sequence completed	59.837	51.592	19.135	$<.01$

Next in this series of analyses was to look at gain scores for each group. Due to the previous significant findings, the effects of pretest scores, number of tutoring sessions, and last step completed in the sequence were removed to control for as many factors as possible. Table VII presents the results of these analyses.

These data indicate significant differences in the size of the gain scores on all but consonant sounds and short vowel sounds. These data also indicate that students tutored by other students made significantly greater gains than adult tutored students when other sources of influence on posttest scores are removed.

These findings seem to say, given students of equal beginning ability and the same amount of time in tutoring sessions, student tutors can produce greater reading gains than adult tutors. There may be still additional sources of influence not accounted for in these analyses which may tend to move the differences in favor of the adult tutors. Such sources of influence

TABLE VII

Gain Scores
Student vs. Adult Tutored
Pretest Scores, # Tutoring Sessions and #
Last Step Completed Partialled Out

Variance	Adult	Student	F	P
Letter Names	1.328	1.609	8.088	< .01
Consonant Sounds	4.269	4.151	< 1.00	> .05*
Short Vowel Sounds	2.630	2.683	< 1.00	> .05*
Digraphs	3.275	3.786	14.969	< .01
Basic Sight Words	4.067	4.841	10.907	< .01
Additional Sight Words	45.077	61.154	20.686	< .01
Decoding	28.868	31.946	6.288	< .01

*Not significant

may include the age of the student, or the attitude of the student toward reading. An older student for example, may have built up more emotional reactions to reading because of his poor experience with it than a younger child who is still excited about the possibilities of being able to read. Further analyses are suggested looking at attitude of student as a factor, age as a factor, and frequency of tutoring sessions. It may well be that the adult tutors, most of whom were also tutor managers, were not able to meet with the child as frequently and thereby lost ground from session to session because of forgetting.

The significant differences between the gains achieved by the student tutors is to be expected, because the tutorial supervisors systematically assumed the responsibility of tutoring these students who evidenced the most acute learning problems.

These data indicate very strongly that both adults and upper grade elementary students can function effectively as tutors and bring about significant gains in reading skills. Going along with gains in reading skills, it is expected that there should be some change in reading behavior. A questionnaire was sent to the parents of some 400 students and student tutors asking about the reading behavior of the student. Of the roughly 400 questionnaires, 287 were returned with some responses describing the student's reading behavior. Perhaps the most significant responses were those made in response to an open-ended question asking for examples of behavior change. Comments have been received from parents where they have noted dramatic changes in the frequency with which their child reads and in his or her attitude toward reading and often toward school in general. Of the 287 forms received only one was negative. In the eyes of a great number of parents the tutoring program in reading has had significant impact on their child or children. Many parents said they hoped the program would be able to continue.

APPENDIX B

Job Descriptions

JOB DESCRIPTION

Tutor Aide

RATIONALE: The Title I Structured Tutoring Program in the Boise Public Schools utilizes cross-age tutoring by trained student tutors who are supervised and trained by the Tutor Manager.

The major purpose of this program is to improve reading and math skills of students through the use of trained paraprofessionals.

Tutor aides will serve the needs of students who could not be otherwise helped through the student tutorial program.

JOB SUMMARY: General statement of qualifications and responsibilities:

The candidate need not have a college degree but must consent to be thoroughly trained in the techniques and procedures of the tutoring program. He/she must possess a positive attitude toward children so that he/she may help promote positive self-image in the children.

Specific responsibilities:

1. Testing: The Tutor Aide administers prescribed diagnostic tests to potential students to be tutored. He/she then judges from the test results which students may benefit from the tutorial program.

2. Tutoring Techniques: Specific techniques must be followed in this program. The Tutor Aide will use the techniques of positive reinforcement prescribed in the tutoring materials.

3. Tutoring individual children. He/she will tutor individual children who cannot be tutored by students.

4. Record Keeping: Detailed records must be kept on each student tutored. Pretest scores, daily progress, posttest scores and learning gains must all be kept in prescribed fashion.

5. Meeting with faculty and parents: He/she must meet with faculty and maintain an open communication as to the student's progress and attitude. He/she must also report to the parents of the students involved, as to their progress and attitude by means of written reports and parent conferences.

6. The Tutor Aide reports through the Tutor Managers to the principal in his/her school.

JOB DESCRIPTION

Tutor Manager

RATIONALE:

The Title I Structured Tutoring Program in the Boise Public Schools utilizes cross-age tutoring by trained student tutors who are supervised and trained by the Tutor Manager.

The major purpose of this program is to improve reading and math skills of second and third grade students through the use of trained paraprofessionals and student tutors from the fifth and sixth grades.

The need for supervision and management of the student tutorial program requires the full time services of a well-trained person. This person must be trained in: 1) diagnosic testing proceedures, 2) tutoring techniques, 3) tutoring individuals, 4) record keeping, 5) student tutor training and management, 6) scheduling tutoring times, 7) meeting with parents and faculty.

JOB SUMMARY:

General statement of qualifications and responsibilities:

The candidate must have at least a high school education and consent to be thoroughly trained in the techniques and procedures of the tutoring program. He/she must possess a positive attitude toward children so that he/she may help promote positive self-image in the children.

Specific responsibilities:

1. Testing: The Tutor Manager administers prescribed diagnostic tests to potential students to be tutored. He/she then judges from the test results which students may benefit from the tutorial program.

2. Tutoring Techniques: Specific techniques must be followed in this program. The Tutor Manager must use these techniques of positive reinforcement and see to it that all student tutors follow the same techniques.

3. Tutoring individual children. He/she will tutor individual children whose learning problems are more severe in nature.

4. Record Keeping: Detailed records must be kept on each student tutored. Pretest scores, daily progress, posttest scores and learning gains must all be kept in prescribed fashion.

5. Student tutor training and management: He/she must competently train student tutors and oversee their tutoring daily.

6. Scheduling tutoring times: The Tutor Manager must confer with all teachers who have students involved in the Structured Tutorial program in order to schedule appropriate tutoring times for all students and teachers involved.

7. Meeting with faculty and parents: He/she must meet with faculty and maintain an open communication as to the students progress and attitude. He/she must also report to the parents of the students involved, as to their progress and attitude by means of written reports and parent conferences.

8. The Tutor Manager reports directly to the principal, Tutoring Program Specialist and Coordinator of Federal Programs.